



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/060,797	01/29/2002	Ken Sakuma	113197-023	8252
24573	7590	06/29/2004	EXAMINER	
BELL, BOYD & LLOYD, LLC			LEE, HWA S	
PO BOX 1135			ART UNIT	
CHICAGO, IL 60690-1135			PAPER NUMBER	
			2877	

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/060,797	Applicant(s) SAKUMA ET AL.	
	Examiner Andrew H. Lee	Art Unit 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1, 3, 9, 16-20** are rejected under 35 U.S.C. 102(b) as being anticipated by Kondo et al (Optics Letters, “Fabrication of long-period fiber gratings by focused irradiation of infrared femtosecond laser pulses.”).

Kondo shows a method of making gratings in a fiber comprising the steps of:

setting (onto the xyz stage) at least one portion (grating area) between said ports (ends of the fiber) as a refractive index adjustment area;

inputting signal light (white light source) into one port and monitoring (spectrum analyzer) the signal light outputted from other ports; and

adjusting optical characteristics (irradiating light from a laser) of said optical coupler (fiber) by adjusting refractive index of said refractive index adjustment area by focusing a laser beam during the monitoring.

With regards to “for forming portions of said waveguide core other than the refractive index adjustment area”, a recitation of the intended purpose must result in a difference in method between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art step is capable of performing the intended use, then it meets the claim. In a claim drawn to a

process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims **5-8, 10-15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Miura (US 5,978,538) in view of Yoshimura (Patent Abstracts of Japan 07-063936) and Miura, K., et al., ("Photowritten optical waveguides in various glasses with ultrashort pulse lasers" Applied Physics Letter, Vol. 71, No. 23, December 8, 1997, pp. 3329-3331.)

Miura US 5,978,538 (Miura '538 hereinafter) shows the formation of optical waveguides using the light-induced effects on refractive index comprising the steps of:

forming said waveguide core (the first couple passes);

focusing a laser beam into said waveguide core (3);

scanning said waveguide core by shifting the focal point of said laser beam along said waveguide core repeatedly (for example: column 4 lines 27+).

Muira '538 does not expressly teach the adjusting optical characteristics of said optical coupler/splitter by changing the number of scanning.

Miura , K. teaches that the refractive index changes with the number of scanning (Figure 13).

Yoshimura shows the desire to correct the refractive index of waveguides by further scanning of focused laser.

At the time of the invention, one of ordinary skill in the art would have irradiated the waveguide with a number of passes (scannings) in order to properly adjust waveguide to have the desired refractive index (optical pathlength). And in a following step, measured the waveguide properties and if needed, passed the focus laser a number more times in order adjust the properties, thus "changing the number of scanning."

With regards to **claim 6**, one of ordinary skill in the art would have deduced from the teachings of Muira, K. that a predetermined number of scannings can be estimated because each scan resulted in a certain amount of change in refractive index and knowing how much of a change in refractive index is desired, the skilled artisan would be able to estimate the number of passes required.

With regards to **claims 9-15**, one of ordinary skill in the art would have recognized that any type of waveguide can be corrected including Y-couplers and taps and therefore would have correct refractive indexes to such waveguides.

Art Unit: 2877

4. **Claims 2 and 4** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo as applied to claim 1 above, and further in view of Muira '538.

Kondo does not expressly show other waveguide core portions are made by a focused laser. Muira '538 shows waveguide core made by focused laser beams. At the time of the invention, one of ordinary skill in the art would have made the waveguide core of Kondo of the same type as the waveguide core of Muira '538. One of ordinary skill in the art would have recognized that both optical fibers and optical waveguides are functional equivalents, so a skilled artisan would have made Bragg gratings into a core made by a focused laser beam since optical waveguides are generally known in the art to be more compact thus enabling the apparatus to be smaller.

Papers related to this application may be submitted to Technology Center (TC) 2800 by facsimile transmission. Papers should be faxed to TC 2800 via the PTO Fax Center located in CP4-4C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Center number is 703-872-9306 for regular communications and for After Final communications.

If the Applicant wishes to send a Fax dealing with either a Proposed Amendment or for discussion for a phone interview then the fax should:

- a) Contain either the statement "DRAFT" or "PROPOSED AMENDMENT" on the Fax Cover Sheet; and
- b) Should be unsigned by the attorney or agent.

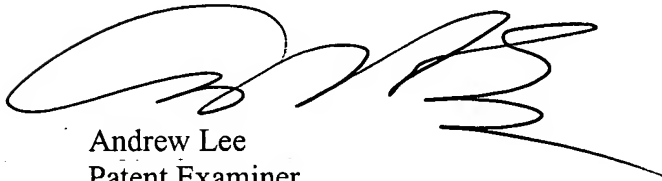
Art Unit: 2877

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Hwa Lee whose telephone number is (571) 272-2419.

The examiner can normally be reached on M-Th. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (571) 272-2415.

A handwritten signature in black ink, appearing to read 'Andrew Lee', with a large, stylized initial 'A' and 'L'.

Andrew Lee
Patent Examiner
Art Unit 2877

June 23, 2004/ahl